

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims

1. – 22. (Canceled)

23. (New) A method of receiving a signal from a multiple-input-multiple-output (MIMO) communication channel having a plurality of input channels and a plurality of output channels, the method comprising the steps of:

generating initial taps that represent an impulse response estimate of the MIMO communication channel;

generating prefilter taps based on the initial taps;

generating output channel taps based on the generated initial taps and the generated prefilter taps;

pre-filtering the received signal using the generated prefilter taps to generate an output signal, the output signal comprising a signal component and a noise component, which filtered noise affecting the output channels are mutually independent; and

selecting the prefilter taps generated from the generated initial taps by calculating a maximized ratio of signal energy to noise energy (SNR) in some of the output channel taps in relation to a weighted sum of ratios of signal energy in other of the output channel taps and energy of the noise component of the output signal.

24. (New) The method of Claim 23, wherein generating prefilter taps further comprises generating a matrix of size $N_o \times N_o$ of prefilter taps, wherein N_o is a number of output channels of the MIMO communication channel.

25. (New) The method of Claim 23, wherein the weighted sum of ratios of signal energy in other of the output channel taps and energy of the noise component of the output signal is replaced by the weighted sum of ratios of signal energy for all other of the output channel taps and energy of the noise component of the output signal.

26. (New) A receiver comprising:
a channel estimator configured to generate initial taps that represent an impulse response estimate of a multiple-input-multiple-output (MIMO) communication channel having a plurality of input channels and a plurality of output channels;

said channel estimator further configured to generate prefilter taps based on the initial taps;

said channel estimator further configured to generate output channel taps based on the generated initial taps and the generated prefilter taps;

a filter coupled to the channel estimator configured to pre-filter the received signal using the generated prefilter taps to generate an output signal. the output signal comprising a signal component and a noise component, which filtered noise affecting the output channels are mutually independent,

the prefilter taps generated from the initial taps being selected by the channel estimator by calculating a maximized ratio of signal energy and noise energy (SNR) in some of the output channel taps in relation to a weighted sum of ratios of signal energy

in other of the output channel taps and energy of the noise component of the output signal.

27. (New) The receiver of Claim 26, wherein the channel estimator is further configured to generate a matrix of size $N_o \times N_o$ of the prefilter taps, wherein N_o is a number of output channels of the MIMO communication channel.

28. (New) The receiver of Claim 26, wherein the weighted sum of ratios of signal energy in other of the output channel taps and energy of the noise component of the output signal is replaced by the weighted sum of ratios of signal energy for all other of the output channel taps and energy of the noise component of the output signal.